

Complete Summary

TITLE

Pneumonia: percent of patients whose initial emergency department blood culture specimen was collected prior to first hospital dose of antibiotics.

SOURCE(S)

Specifications manual for national hospital quality measures, version 1.04. Centers for Medicare and Medicaid Services (CMS), Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2005 Aug. various p.

Measure Domain

PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

SECONDARY MEASURE DOMAIN

Does not apply to this measure

Brief Abstract

DESCRIPTION

This measure is used to assess the percent of pneumonia patients whose initial emergency department blood culture specimen was collected prior to the first hospital dose of antibiotics.

RATIONALE

Published pneumonia treatment guidelines recommend performance of blood cultures for all inpatients to optimize therapy. Improved survival has been associated with optimal therapy. In addition, the yield of clinically useful information is greater if the culture is collected before antibiotics are administered.

PRIMARY CLINICAL COMPONENT

Pneumonia; blood cultures

DENOMINATOR DESCRIPTION

Pneumonia patients 18 years of age and older who have an initial blood culture collected in the emergency department (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

NUMERATOR DESCRIPTION

Number of pneumonia patients whose initial emergency department blood culture was performed prior to the administration of the first hospital dose of antibiotics

Evidence Supporting the Measure

EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

NATIONAL GUIDELINE CLEARINGHOUSE LINK

- [Update of practice guidelines for the management of community-acquired pneumonia in immunocompetent adults.](#)

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Overall poor quality for the performance measured
Variation in quality for the performance measured

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Bartlett JG, Dowell SF, Mandell LA, File Jr TM, Musher DM, Fine MJ. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. Clin Infect Dis2000 Aug;31(2):347-82. [218 references] [PubMed](#)

Heffelfinger JD, Dowell SF, Jorgensen JH, Klugman KP, Mabry LR, Musher DM, Plouffe JF, Rakowsky A, Schuchat A, Whitney CG. Management of community-acquired pneumonia in the era of pneumococcal resistance: a report from the Drug-Resistant Streptococcus pneumoniae Therapeutic Working Group. Arch Intern Med2000 May 22;160(10):1399-408. [PubMed](#)

Mandell LA, Bartlett JG, Dowell SF, File TM Jr, Musher DM, Whitney C. Update of practice guidelines for the management of community-acquired pneumonia in

immunocompetent adults. Clin Infect Dis2003 Dec 1;37(11):1405-33. [235 references] [PubMed](#)

Mandell LA, Marrie TJ, Grossman RF, Chow AW, Hyland RH. Canadian guidelines for the initial management of community-acquired pneumonia: an evidence-based update by the Canadian Infectious Diseases Society and the Canadian Thoracic Society. The Canadian Community-Acquired Pneumonia Working Group. Clin Infect Dis2000 Aug;31(2):383-421. [PubMed](#)

Metersky ML, Ma A, Bratzler DW, Houck PM. Predicting bacteremia in patients with community-acquired pneumonia. Am J Respir Crit Care Med2004 Feb 1;169(3):342-7. [PubMed](#)

Niederman MS, Mandell LA, Anzueto A, Bass JB, Broughton WA, Campbell GD, Dean N, File T, Fine MJ, Gross PA, Martinez F, Marrie TJ, Plouffe JF, Ramirez J, Sarosi GA, Torres A, Wilson R, Yu VL. Guidelines for the management of adults with community-acquired pneumonia. Diagnosis, assessment of severity, antimicrobial therapy, and prevention. Am J Respir Crit Care Med2001 Jun;163(7):1730-54. [PubMed](#)

State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Accreditation

Collaborative inter-organizational quality improvement

Internal quality improvement

Pay-for-performance

Application of Measure in its Current Use

CARE SETTING

Hospitals

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Measure is not provider specific

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

Age greater than or equal to 18 years

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

Unspecified

ASSOCIATION WITH VULNERABLE POPULATIONS

See "Burden of Illness" field.

BURDEN OF ILLNESS

In the United States (U.S.), pneumonia is the sixth most common cause of death. From 1979-1994, the overall rates of death due to pneumonia and influenza increased by 59%. Much of this increase is due to a greater population of persons aged 65 years or older, and a changing epidemiology of pneumonia, including a greater proportion of the population with underlying medical conditions at increased risk of respiratory infection.

EVIDENCE FOR BURDEN OF ILLNESS

Bartlett JG, Dowell SF, Mandell LA, File Jr TM, Musher DM, Fine MJ. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. Clin Infect Dis 2000 Aug; 31(2): 347-82. [218 references] [PubMed](#)

UTILIZATION

Annually, 2-3 million cases of community acquired pneumonia result in 10 million physician visits; 500,000 hospitalizations; and 45,000 deaths.

EVIDENCE FOR UTILIZATION

Bartlett JG, Dowell SF, Mandell LA, File Jr TM, Musher DM, Fine MJ. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. Clin Infect Dis 2000 Aug; 31(2): 347-82. [218 references] [PubMed](#)

COSTS

Unspecified

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Timeliness

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

Discharges, 18 years of age and older, with a principal diagnosis of pneumonia or a principal diagnosis of septicemia or respiratory failure (acute or chronic) and an other diagnosis code of pneumonia who have an initial blood culture collected in the emergency department

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions

Discharges with an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Principal Diagnosis Code of pneumonia or ICD-9-CM Principal Diagnosis Code of septicemia or respiratory failure (acute or chronic) and an ICD-9-CM Other Diagnosis Code of pneumonia (as defined in Appendix A of the original measure documentation) who have an initial blood culture collected in the emergency department

Exclusions

- Patients received in transfer from another acute care or critical access hospital, including another emergency department
- Patients who had no working diagnosis of pneumonia at the time of admission
- Patients receiving Comfort Measures Only
- Patients less than 18 years of age
- Patients who do not receive antibiotics or a blood culture

DENOMINATOR (INDEX) EVENT

Clinical Condition
Diagnostic Evaluation
Institutionalization
Therapeutic Intervention

DENOMINATOR TIME WINDOW

Time window is a single point in time

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions
Number of pneumonia patients whose initial emergency department blood culture was performed prior to the administration of the first hospital dose of antibiotics

Exclusions
None

NUMERATOR TIME WINDOW

Institutionalization

DATA SOURCE

Administrative and medical records data

LEVEL OF DETERMINATION OF QUALITY

Individual Case

PRE-EXISTING INSTRUMENT USED

Unspecified

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a higher score

ALLOWANCE FOR PATIENT FACTORS

Unspecified

STANDARD OF COMPARISON

External comparison at a point in time
External comparison of time trends
Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

The core measure pilot project was a collaboration among the Joint Commission, five state hospitals associations, five measurement systems, and 83 hospitals from across nine states. Participating hospitals collected and reported data for community acquired pneumonia (CAP) measures from March 2001 to December 2001.

Core measure reliability visits were completed the summer of 2001 at a random sample of 16 participating hospitals across 6 states.

Preliminary data from the pilot test show a mean measure rate of 79%.

EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Joint Commission on Accreditation of Healthcare Organizations (JCAHO). A comprehensive review of development and testing for national implementation of hospital core measures. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 40 p.

Identifying Information

ORIGINAL TITLE

PN-3b: blood cultures performed in the emergency department prior to initial antibiotic received in hospital.

MEASURE COLLECTION

[National Hospital Quality Measures](#)

MEASURE SET NAME

[Pneumonia](#)

SUBMITTER

Centers for Medicare & Medicaid Services
Joint Commission on Accreditation of Healthcare Organizations

DEVELOPER

Centers for Medicare and Medicaid Services/Joint Commission on Accreditation of Healthcare Organizations

ENDORSER

National Quality Forum

INCLUDED IN

Hospital Compare
Hospital Quality Alliance
National Healthcare Disparities Report (NHDR)
National Healthcare Quality Report (NHQR)

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2000 Aug

REVISION DATE

2005 Aug

MEASURE STATUS

Please note: This measure has been updated. The National Quality Measures Clearinghouse is working to update this summary.

SOURCE(S)

Specifications manual for national hospital quality measures, version 1.04. Centers for Medicare and Medicaid Services (CMS), Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2005 Aug. various p.

MEASURE AVAILABILITY

The individual measure, "PN-3b: Blood Cultures Performed in the Emergency Department Prior to Initial Antibiotic Received in Hospital," is published in "Specifications Manual for National Hospital Quality Measures." This document is available from the [Joint Commission on Accreditation of Healthcare Organizations \(JCAHO\) Web site](#). Information is also available from the [Centers for Medicare & Medicaid Services \(CMS\) Web site](#). Check the JCAHO Web site and CMS Web site regularly for the most recent version of the specifications manual and for the applicable dates of discharge.

COMPANION DOCUMENTS

The following are available:

- A software application designed for the collection and analysis of quality improvement data, the CMS Abstraction and Reporting Tool (CART), is available from the [CMS CART Web site](#). Supporting documentation is also available. For more information, e-mail CMS PROINQUIRIES at proinquiries@cms.hhs.gov.
- Joint Commission on Accreditation of Healthcare Organizations (JCAHO). A comprehensive review of development and testing for national implementation of hospital core measures. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 40 p. This document is available from the [JCAHO Web site](#).
- Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Attributes of core performance measures and associated evaluation criteria. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 5 p. This document is available from the [JCAHO Web site](#).
- Hospital compare: a quality tool for adults, including people with Medicare. [internet]. Washington (DC): U.S. Department of Health and Human Services; 2005 [updated 2005 Sep 1]; [cited 2005 Apr 15]. This is available from the [Medicare Web site](#).

NQMC STATUS

This NQMC summary was completed by ECRI on February 7, 2003. The information was verified by the Centers for Medicare/Medicaid Services and the Joint Commission on Accreditation of Healthcare Organizations on February 12, 2003. This NQMC summary was updated by ECRI on October 24, 2005. The information was verified by the measure developer on December 7, 2005.

COPYRIGHT STATEMENT

The Specifications Manual for National Hospital Quality Measures [Version 1.04, August, 2005] is the collaborative work of the Centers for Medicare & Medicaid Services and the Joint Commission on Accreditation of Healthcare Organizations. The Specifications Manual is periodically updated by the Centers for Medicare & Medicaid Services and the Joint Commission on Accreditation of Healthcare Organizations. Users of the Specifications Manual for National Hospital Quality Measures should periodically verify that the most up-to-date version is being utilized.

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Date Modified: 8/21/2006

